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EXAMINER	
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ART UNIT	**PAPER NUMBER**
3628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/588,030	Applicant(s) CROOKSHANKS, REX J.	
	Examiner Jeffrey Pwu	Art Unit 3628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

2. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

For a claim to be statutory under 35 USC 101 the following two conditions must be met:

1) In the claim, the practical application of an algorithm or idea result in a useful, concrete, tangible result, AND

2) The claim provides a limitation in the technological art that enables a useful, concrete, tangible result.

As to the technology requirement, note MPEP Section iV 2(b). Also note In Re Waldbaum, 173USPQ 430 (CCPA 1972) which teaches "useful arts" is synonymous with "technological arts". In re Musgrave, 167USPQ 280 (CCPA1970), In re Johnston, 183USPQ 172 (CCPA 1974), and In re Toma, 197USPQ 852 (CCPA 1978), all teach a technological requirements.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-10, 12, 14, 17-18 are rejected under 35 U.S.C. 102(e) as being unpatentable over Krause (US 5,950,206).

Krause discloses claims:

1. A method of topologically subdividing project work information included in construction project plans and of linking said subdivided plan information to at least one plurality of construction project contracts and/or contracts to enhance the precision, clarity, specificity and completeness of both said plans and said subcontracts, said plans including at least one plan sheet, comprising the following steps in any operative order:
(a) defining, a plurality of topological subdivision regions of said at least one plan sheet, each of said plurality of subdivision regions characterizing a selected portion of the scope of work defined by said plans (col.1, lines 14-34; col.2, line 2-col.3, line 35);
(b) linking each of said plurality of subdivision regions to one of a plurality of said contracts (col.2, line 2-col.3, line 35); and
(c) incorporating said linked region into said contract to define a portion of the scope of work to be performed under said contract (col.1, lines 14-34; col.2, line 2-col.3, line 35).

2. A method of subdividing and linking as in claim 1, wherein said topological subdivision defining step includes:
(a) inputting said at least one plan sheet as electronic data to a computer data processing, system including a computer readable memory device (16; col.2, line 2-col.3, line 35);
(b) storing said input plan sheet data as a file in computer-readable memory device 9fig.3, steps 52-68);
(c) inputting data to said computer data processing system to define at least one of said plurality of subdivision regions of said at least one plan sheet, said subdivision region of said plan sheet characterizing, a selected portion of the project work defined lay said plans; said portion of said project work corresponding to the work to be performed under a particular one of said contracts (col.2, line 2-col.3, line 35); and
(d) storing said definition of said at least one subdivision region as data in computer readable memory device (col.2, line 2-col.3, line 35).

3. A method o f subdividing and linking as in claim 2, further including:
(a) the step of providing in said computer-readable memory a table defining a plurality of project subcontract work categories, each of said work categories

corresponding to the work to be performed under one of said plurality of subcontracts(col.2, line 2-col.3, line 35); and
(b) the step of linking in said computer-readable memory said at least one subdivision region with a selected one of said work categories, so as to create a data; structure correlating said at least one subdivision region with said selected work category (col.2, line 2-col.3, line 35;"In most areas, for bidding purposes, a single company distributes rolls of microfiche of the blueprint drawings or building plans in their entirety to interested contractors and subcontractors. Selected ones of the drawings on the microfiche are then viewed to provide information to estimate construction costs and prepare bid proposals on the work to be done. Though a contractor may be interested in only one particular portion of the building, that contractor must search through all of the plans in order locate the drawings of interest.") .

4. A method o f subdividing and linking a s. in claim 3, further including:
(a) a the step of providing in said computer-readable memory at least one subcontract document file (col.2, line 2-col.3, line 35;"In most areas, for bidding purposes, a single company distributes rolls of microfiche of the blueprint drawings or building plans in their entirety to interested contractors and subcontractors. Selected ones of the drawings on the microfiche are then viewed to provide information to estimate construction costs and prepare bid proposals on the work to be done. Though a contractor may be interested in only one particular portion of the building, that contractor must search through all of the plans in order locate the drawings of interest."); and
(b) a step of linking in said computer-readable memory at least said selected work category, thereby including in said data structure a correlation between said selected work category and said subcontract document file, and thereby including in said data structure a correlation between said at least one plan sheet subdivision region aid said subcontract document file, so as to characterize a selected portion of said project work to be performed under said subcontract (col.1, lines 14-34; col.2, line 2-col.3, line 35).

5. A method of subdividing and linking as in claim 4, further including:
(a) a step of associating in computer readable memory a selected icon file with said at least one subdivision region and said at least one plan sheet (fig.3);
(b) a step of displaying an image of said selected subcontract document on a display device connected to said computer system, said computer system including a graphical user interface (fig.3);
(c) a step of displaying said selected icon as all image superimposed upon said subcontract image (Figs.1,3); and
(d) a step of displaying an image of said subdivision region superimposed upon said plan sheet in response to a selection of said icon using said graphic user interface, so as to characterize at least a portion of the work to be performed under said

subcontract by plan information included in said subdivision and plan sheet images (fig.1).

6. A method o f subdividing and linking as in claim 4, further including:
(a) a step of associating an index reference with said at least one subdivision region and said at least one plan sheet (figs. 1,3);
(b) a step of printing said selected subcontract document with, said index reference included in said subcontract document (fig.1); and
(d) a the step of printing an image of said indexed subdivision region superimposed upon said plan sheet, so as characterize at least a portion of the work to be performed under said subcontract by plan information included in said subdivision and plan sheet images(figs. 1,3);

7. A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:
defining at least one closed boundary curve coordinated with said plan sheet, said subdivision region comprising the plan area enclosed by said boundary (col.1, lines 14-34; col.2, line 2-col.3, line 35).

8. A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:
(a) defining at least one trace path upon said at least one plan sheet, said trace path delimiting a trace area of said plan sheet lying within a predetermined distance from said path, said subdivision region comprising said trace area (figs.1-4).

9. A method of subdividing and linking as in claim 4, wherein said subdivision defining step includes:
(a) defining at least one center point upon said at least one plan sheet, said center point delimiting an area of said plan sheet lying within a predetermined geometric boundary shape coordinate with said center point, said subdivision region comprising the plan area enclosed by said predetermined boundary shape (figs.1-4).

10. A method o f subdividing and linking as in claim 4, wherein s aid subdivision defining step includes:
(a) defining a reference grid coordinate with said plan sheet, said grid dividing said sheet into a plurality of predefined sub-areas (col.1, lines 14-34; col.2, line 2-col.3, line 35); and
(b) selecting one or more contiguous ones of said plurality of sub-areas, said subdivision region comprising said selected contiguous sub-areas (col.1, lines 14-34; col.2, line 2-col.3, line 35).

12. A computer data processing system for inter-linking construction project plans to bidding contracts to enhance the precision, clarity and completeness of both said plans and said contracts, wherein the scope of work of said project is defined by said plans, said plans comprising at least one sheet, and wherein said project work is bid by means of said bidding contracts, each of said bidding contracts including an agreement to perform specified portions of said project work, said data processing system comprising:
(a) a computer-readable memory means for storing at least one plan ale including digital image information of said plan sheets(col.1, lines 14-34; col.2, line 2-col.3, line 35);
(b) a computer display means connected to said memory means for, displaying said plan sheet image(col.1, lines 14-34; col.2, line 2-col.3, line 35);
(c) a computer-operator interface means for inputting information to specify a closed boundary on said plan sheet image to define at least one subdivision region of said plan sheet image, said subdivision region corresponding to a portion of the project work defined by said plans(col.1, lines 14-34; col.2, line 2-col.3, line 35);
(d) a computer processing mean, connected to said memory means for storing said boundary specifying information; and
(e) linking means connected to said memory means for linking said stored plan image and said stored boundary information to at least one bidding contract, so as to define a portion of the project work to be performed under said contract (col.1, lines 14-34; col.2, line 2-col.3, line 35).

14. A computer program product for the inter-linking of construction project plans to bidding contracts to enhance the precision, clarity and completeness of both said plans and said contracts, wherein:
(i) the scope of work of said project is defined by said plans comprising at least one plan sheet(col.1, lines 14-34; col.2, line 2-col.3, line 35);
(ii) said project is bid by means of said bidding contracts, each of said bidding contracts including an agreement to perform specified portions of the scope of project work(col.1, lines 14-34; col.2, line 2-col.3, line 35);and
(iii) said computer program product is for operating on a computer system including processor means, memory means, display means and operator input means(col.1, lines 14-34; col.2, line 2-col.3, line 35);
said computer program product comprising a computer useable medium having computer readable program code comprising: (also see col.4, line 1-col.7, line 16)

(a) a first program code means for causing said computer system to read a file stored in said memory means, said file including an image of at least one of said plan sheets (col.3, line 63-col.5, line 35);
(b) a second program code means for causing said computer system to display said plan sheet image (14, 60);
(c) a third program code means for causing said computer system to input operator-specified information to define a boundary around at least one subdivsion region of said plan sheet image, said subdivision region corresponding to a portion of the project work defined by said plans (10, 12, 14, 16, 18, 20, 24, 26, 20, 28);
(d) a fourth program cods means for causing said computer system to store raid boundary-defining information in said memory means(10, 14, 16, 18, 24, 26, 20, 28, 60);and
(e) a fifth program code means for causing said computer system to, link said stored plan image and said stored boundary information to at least one bidding contract so as to said define a portion of the project works to be performed under said contract(10, 14, 16, 18, 24, 26, 20, 28, 60).

17. An electronic business method as in claim 1 wherein:
a) said links include hyperlinks to affiliates providing services under referral or commission fee basis aid affiliate including at least one of owner, developer, architects, contractors, engineers, surveyors, subcontractors, lenders, insurers, accounting, service providers, legal service providers, and title services (col.1, lines 14-34; col.2, line 2-col.3, line 35).

18. An electronic business method as in claim 17 wherein said operator interactively provides said inter linking services at least one user subscriber including owners, developers, architects, contractors, and subcontractors (claims 1-21)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11, 13, 15, 16, 19-20 are rejected under 35 U.S.C. 103(a) as obvious over Krause.

Krause discloses all of the claimed limitations except for showing the use of Internet.

Internet communications is well known since 1960 or earlier.

The following link describes a brief history of the Internet:

http://www.walthowe.com/navnet/history.html

"The Internet was the result of some visionary thinking by people in the early 1960s who saw great potential value in allowing computers to share information on research and development in scientific and military fields. J.C.R. Licklider of MIT, first proposed a global network of computers in 1962, and moved over to the Defense Advanced Research Projects Agency (DARPA) in late 1962 to head the work to develop it. Leonard Kleinrock of MIT and later UCLA developed the theory of packet switching, which was to form the basis of Internet connections. Lawrence Roberts of MIT connected a Massachusetts computer with a California computer in 1965 over dial-up telephone lines. It showed the feasibility of wide area networking, but also showed that the telephone line's circuit switching was inadequate. Kleinrock's packet switching theory was confirmed. Roberts moved over to DARPA in 1966 and developed his plan for ARPANET. These visionaries and many more left unnamed here are the real founders of the Internet.

> When Senator Ted Kennedy heard in 1968 that the pioneering Massachusetts company BBN had won the ARPA contract for an "interface message processor (IMP)," he sent a congratulatory telegram to BBN for their ecumenical spirit in winning the "interfaith message processor" contract.

The Internet, then known as ARPANET, was brought online in 1969 under a contract let by the renamed Advanced Research Projects Agency (ARPA) which initially connected four major computers at universities in the southwestern US (UCLA, Stanford Research Institute, UCSB, and the University of Utah). The contract was carried out by BBN of Cambridge, MA under Bob Kahn and went online in December 1969. By June 1970, MIT, Harvard, BBN, and Systems Development Corp (SDC) in Santa Monica, Cal. were added. By January 1971, Stanford, MIT's Lincoln Labs, Carnegie-Mellon, and Case-Western Reserve U were added. In months to come, NASA/Ames, Mitre, Burroughs, RAND, and the U of Illinois plugged in. After that, there were far too many to keep listing here.

> **Who was the first to use the Internet?**
> Charley Kline at UCLA sent the first packets on ARPANet as he tried to connect to Stanford Research Institute on Oct 29, 1969. The system crashed as he reached the G in LOGIN!

The Internet was designed in part to provide a communications network that would work even if some of the sites were destroyed by nuclear attack. If the most direct route was not available, routers would direct traffic around the network via alternate routes.

The early Internet was used by computer experts, engineers, scientists, and librarians. There was nothing friendly about it. There were no home or office personal computers in those days, and anyone who used it, whether a computer professional or an engineer or scientist or librarian, had to learn to use a very complex system.

> **Did Al Gore invent the Internet?**
> According to a CNN transcript of an interview with Wolf Blitzer, Al Gore said,"During my service in the United States Congress, I took the initiative in creating the Internet." Al Gore was not yet in Congress in 1969 when ARPANET started or in 1974 when the term Internet first came into use. Gore was elected to Congress in 1976. In fairness, Bob Kahn and Vint Cerf acknowledge in a paper titled Al Gore and the Internet that Gore has probably done more than any other elected official to support the growth and development of the Internet from the 1970's to the present.

E-mail was adapted for ARPANET by Ray Tomlinson of BBN in 1972. He picked the @ symbol from the available symbols on his teletype to link the username and address. The telnet protocol, enabling logging on to a remote computer, was published as a Request for Comments (RFC) in 1972. RFC's are a means of sharing developmental work throughout community. The ftp protocol, enabling file transfers between Internet sites, was published as an RFC in 1973, and from then on RFC's were available electronically to anyone who had use of the ftp protocol.

Libraries began automating and networking their catalogs in the late 1960s independent from ARPA. The visionary Frederick G. Kilgour of the Ohio College Library Center (now OCLC, Inc.) led networking of Ohio libraries during the '60s and

'70s. In the mid 1970s more regional consortia from New England, the Southwest states, and the Middle Atlantic states, etc., joined with Ohio to form a national, later international, network. Automated catalogs, not very user-friendly at first, became available to the world, first through telnet or the awkward IBM variant TN3270 and only many years later, through the web. See The History of OCLC

> Ethernet, a protocol for many local networks, appeared in 1974, an outgrowth of Harvard student Bob Metcalfe's dissertation on "Packet Networks." The dissertation was initially rejected by the University for not being analytical enough. It later won acceptance when he added some more equations to it.

The Internet matured in the 70's as a result of the TCP/IP architecture first proposed by Bob Kahn at BBN and further developed by Kahn and Vint Cerf at Stanford and others throughout the 70's. It was adopted by the Defense Department in 1980 replacing the earlier Network Control Protocol (NCP) and universally adopted by 1983.

The Unix to Unix Copy Protocol (UUCP) was invented in 1978 at Bell Labs. Usenet was started in 1979 based on UUCP. Newsgroups, which are discussion groups focusing on a topic, followed, providing a means of exchanging information throughout the world . While Usenet is not considered as part of the Internet, since it does not share the use of TCP/IP, it linked unix systems around the world, and many Internet sites took advantage of the availability of newsgroups. It was a significant part of the community building that took place on the networks.

Similarly, BITNET (Because It's Time Network) connected IBM mainframes around the educational community and the world to provide mail services beginning in 1981. Listserv software was developed for this network and later others. Gateways were developed to connect BITNET with the Internet and allowed exchange of e-mail, particularly for e-mail discussion lists. These listservs and other forms of e-mail discussion lists formed another major element in the community building that was taking place.

In 1986, the National Science Foundation funded NSFNet as a cross country 56 Kbps backbone for the Internet. They maintained their sponsorship for nearly a decade, setting rules for its non-commercial government and research uses.

As the commands for e-mail, FTP, and telnet were standardized, it became a lot easier for non-technical people to learn to use the nets. It was not easy by today's standards

by any means, but it did open up use of the Internet to many more people in universities in particular. Other departments besides the libraries, computer, physics, and engineering departments found ways to make good use of the nets--to communicate with colleagues around the world and to share files and resources.

While the number of sites on the Internet was small, it was fairly easy to keep track of the resources of interest that were available. But as more and more universities and organizations--and their libraries-- connected, the Internet became harder and harder to track. There was more and more need for tools to index the resources that were available.

The first effort, other than library catalogs, to index the Internet was created in 1989, as Peter Deutsch and his crew at McGill University in Montreal, created an archiver for ftp sites, which they named Archie. This software would periodically reach out to all known openly available ftp sites, list their files, and build a searchable index of the software. The commands to search Archie were unix commands, and it took some knowledge of unix to use it to its full capability.

> McGill University, which hosted the first Archie, found out one day that half the Internet traffic going into Canada from the United States was accessing Archie. Administrators were concerned that the University was subsidizing such a volume of traffic, and closed down Archie to outside access. Fortunately, by that time, there were many more Archies available.

At about the same time, Brewster Kahle, then at Thinking Machines, Corp. developed his Wide Area Information Server (WAIS), which would index the full text of files in a database and allow searches of the files. There were several versions with varying degrees of complexity and capability developed, but the simplest of these were made available to everyone on the nets. At its peak, Thinking Machines maintained pointers to over 600 databases around the world which had been indexed by WAIS. They included such things as the full set of Usenet Frequently Asked Questions files, the full documentation of working papers such as RFC's by those developing the Internet's standards, and much more. Like Archie, its interface was far from intuitive, and it took some effort to learn to use it well.

Peter Scott of the University of Saskatchewan, recognizing the need to bring together information about all the telnet-accessible library catalogs on the web, as well as other telnet resources, brought out his Hytelnet catalog in 1990. It gave a single place to get

information about library catalogs and other telnet resources and how to use them. He maintained it for years, and added HyWebCat in 1997 to provide information on web-based catalogs.

In 1991, the first really friendly interface to the Internet was developed at the University of Minnesota. The University wanted to develop a simple menu system to access files and information on campus through their local network. A debate followed between mainframe adherents and those who believed in smaller systems with client-server architecture. The mainframe adherents "won" the debate initially, but since the client-server advocates said they could put up a prototype very quickly, they were given the go-ahead to do a demonstration system. The demonstration system was called a gopher after the U of Minnesota mascot--the golden gopher. The gopher proved to be very prolific, and within a few years there were over 10,000 gophers around the world. It takes no knowledge of unix or computer architecture to use. In a gopher system, you type or click on a number to select the menu selection you want. You can use the U of Minnesota gopher today to pick gophers from all over the World

Gopher's usability was enhanced much more when the University of Nevada at Reno developed the VERONICA searchable index of gopher menus. It was purported to be an acronym for Very Easy Rodent-Oriented Netwide Index to Computerized Archives. A spider crawled gopher menus around the world, collecting links and retrieving them for the index. It was so popular that it was very hard to connect to, even though a number of other VERONICA sites were developed to ease the load. Similar indexing software was developed for single sites, called JUGHEAD (Jonzy's Universal Gopher Hierarchy Excavation And Display).

> Peter Deutsch, who developed Archie, always insisted that Archie was short for Archiver, and had nothing to do with the comic strip. He was disgusted when VERONICA and JUGHEAD appeared.

In 1989 another significant event took place in making the nets easier to use. Tim Berners-Lee and others at the European Laboratory for Particle Physics, more popularly known as CERN, proposed a new protocol for information distribution. This protocol, which became the World Wide Web in 1991, was based on hypertext--a system of embedding links in text to link to other text, which you have been using every time you selected a text link while reading these pages. Although started before gopher, it was slower to develop.

The development in 1993 of the graphical browser Mosaic by Marc Andreessen and his team at the National Center For Supercomputing Applications (NCSA) gave the protocol its big boost. Later, Andreessen moved to become the brains behind Netscape Corp., which produced the most successful graphical type of browser and server until Microsoft declared war and developed its MicroSoft Internet Explorer.

MICHAEL DERTOUZOS
1936-2001

The early days of the web was a confused period as many developers tried to put their personal stamp on ways the web should develop. The web was threatened with becoming a mass of unrelated protocols that would require different software for different applications. The visionary Michael Dertouzos of MIT's Laboratory for Computer Sciences persuaded Tim Berners-Lee and others to form the World Wide Web Consortium in 1994 to promote and develop standards for the Web. Proprietary plug-ins still abound for the web, but the Consortium has ensured that there are common standards present in every browser.

Read Tim Berners-Lee's tribute to Michael Dertouzos.

Since the Internet was initially funded by the government, it was originally limited to research, education, and government uses. Commercial uses were prohibited unless they directly served the goals of research and education. This policy continued until the early 90's, when independent commercial networks began to grow. It then became possible to route traffic across the country from one commercial site to another without passing through the government funded NSFNet Internet backbone.

Delphi was the first national commercial online service to offer Internet access to its subscribers. It opened up an email connection in July 1992 and full Internet service in November 1992. All pretenses of limitations on commercial use disappeared in May 1995 when the National Science Foundation ended its sponsorship of the Internet backbone, and all traffic relied on commercial networks. AOL, Prodigy, and CompuServe came online. Since commercial usage was so widespread by this time and educational institutions had been paying their own way for some time, the loss of NSF funding had no appreciable effect on costs.

Today, NSF funding has moved beyond supporting the backbone and higher educational institutions to building the K-12 and local public library accesses on the one hand, and the research on the massive high volume connections on the other.

Microsoft's full scale entry into the browser, server, and Internet Service Provider market completed the major shift over to a commercially based Internet. The release of Windows 98 in June 1998 with the Microsoft browser well integrated into the desktop shows Bill Gates' determination to capitalize on the enormous growth of the Internet. Microsoft's success over the past few years has brought court challenges to their dominance. We'll leave it up to you whether you think these battles should be played out in the courts or the marketplace.

A current trend with major implications for the future is the growth of high speed connections. 56K modems and the providers who support them are spreading widely, but this is just a small step compared to what will follow. 56K is not fast enough to carry multimedia, such as sound and video except in low quality. But new technologies many times faster, such as cablemodems, digital subscriber lines (DSL), and satellite broadcast are available in limited locations now, and will become widely available in the next few years. These technologies present problems, not just in the user's connection, but in maintaining high speed data flow reliably from source to the user. Those problems are being worked on, too.

During this period of enormous growth, businesses entering the Internet arena scrambled to find economic models that work. Free services supported by advertising shifted some of the direct costs away from the consumer--temporarily. Services such as Delphi offered free web pages, chat rooms, and message boards for community building. Online sales have grown rapidly for such products as books and music CDs and computers, but the profit margins are slim when price comparisons are so easy, and public trust in online security is still shaky. Business models that have worked well are portal sites, that try to provide everything for everybody, and live auctions. AOL's acquisition of Time-Warner was the largest merger in history when it took place and shows the enormous growth of Internet business! The stock market has had

a rocky ride, swooping up and down as the new technology companies, the dot.com's encountered good news and bad. The decline in advertising income spelled doom for many dot.coms, and a major shakeout and search for better business models is underway by the survivors.

It is becoming more and more clear that many free services will not survive. While many users still expect a free ride, there are fewer and fewer providers who can find a way to provide it. The value of the Internet and the Web is undeniable, but there is a lot of shaking out to do and management of costs and expectations before it can regain its rapid growth.

May you live in interesting times! (ostensibly an ancient Chinese curse)*

For more information on Internet history, visit these sites:

- Hobbes' Internet Timeline . ©1993-8 by Robert H Zakon. Significant dates in the history of the Internet.
- BBN Timeline. Similar to Hobbes'.
- A Brief History of the Internet from the Internet Society. Written by some of those who made it happen."

It would have been obvious at the time of the invention was made to use Krause's apparatus, using a modem, communicating via Internet, to facilitate a construction project processing system to reach out to more buyers and sellers, more bids to bidders, or construction projects to contractors and subcontractors, for faster and efficient information exchange and to improve profits to all parties.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Pwu whose telephone number is 703 308-7835. The examiner can normally be reached on 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Sough can be reached on 703 308-0505.

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